

Applicants: McBean et al.
Serial No.: 10/718,913
Examiner: Michael A. Brown
Art Unit: 3764

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REMARKS

Applicants appreciate the Examiner's having conducted a telephone interview with counsel for Applicants on April 27, 2006, regarding the allowability of the claims in light of the Bonutti reference and other prior art of record. Claims 1-10 remain pending in this application with claims 1 and 9 being independent claims. Claims 11-20 are cancelled without prejudice herein. Applicants retain the right to present claims 11-20 in one or more continuation applications. Applicants have herein amended claims 1 and 9. The amendments, however, have not changed the scope of the claims, but have merely clarified that the forces provided by the actuator cause motion of the body part with respect to the joint. Support for the amendments is found throughout the specification. No new matter has been added.

The Examiner rejected claims 12 and 14 under 35 U.S.C. § 112, first paragraph. Claims 11-20 have been cancelled without prejudice herein. Therefore, these claim rejections are now moot.

35 U.S.C. § 102 Rejection

Claims 1-4, 6, 11-15, 17-18 and 20 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,685,830 issued to Bonutti ("Bonutti"). Independent claim 1 requires, among other things, a brace, a sensor sensing an electromyographic signal and a processor causing an actuator to provide, to the brace, asymmetrical forces, specifically, a force in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force. The Examiner claims that Bonutti discloses, in Fig. 10 and at col. 10, lines 17-19, a sensor that is coupled to muscles. *See*, Office action dated April 6, 2006 at 3. The Examiner appears to be suggesting that the brace itself is supposedly the sensor, e.g., "a sensor (col. 10, lines 17-19) that is coupled to a muscles (because the brace is coupled to a muscle)." *Id.* However, claim 1 requires a brace *and* a sensor. Therefore, Bonutti does not disclose or suggest a sensor and does not disclose or suggest a sensor sensing an electromyographic signal. In addition, the Examiner claims that Bonutti discloses a processor "causing the actuator to provide a force to the brace in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force

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(is intended use) that the prior art is capable of performing.” *Id.* Since Bonutti does not disclose or suggest a sensor sensing any kind of signal, it is unclear how Bonutti discloses a processor causing the actuator to provide a force having a magnitude proportional to a magnitude of the sensor signal. Moreover, Bonutti does not disclose or suggest a processor causing an actuator to provide asymmetrical forces. Rather, Bonutti discloses that the flexible member 110, which may be a rope or cable, “can include or can be replaced by a resilient member, such as an elastic portion or a spring loading structure.” Col. 10, lines 56-58. Thus, Bonutti does not disclose or suggest a processor causing the actuator to provide a force to the brace in two directions, in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force.

The Examiner suggests, once again, that a processor that causes an actuator to provide asymmetrical forces is an intended use “that the prior art is capable of performing.” Office action dated April 6, 2006 at 3; *See also*, Office action dated January 9, 2006 at 5. However, the prior art is not “capable of performing” the recited functionality without the novel and non-obvious implementations described in the pending application. Nothing in the art of record, either alone or in combination, teaches or suggests such an asymmetrical pattern of forces in the context of the subject matter claimed herein. In particular (among other references), Bonutti does not disclose or suggest a processor causing an actuator “to provide a force to the brace in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force” as required by Claim 1. Accordingly, claim 1, and claims 2-8 which depend therefrom, should be allowed.

35 U.S.C. § 103 Rejection

Claims 9-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bonutti in view of U.S. Patent No. 5,888,212 issued to Petrofsky et al. (“Petrofsky”). Independent claim 9; requires, among other things, a brace, a sensor sensing a desired muscular force and providing a sensor signal output in response thereto, and a processor causing an actuator to provide, to the brace, asymmetrical forces, specifically, a force in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force.

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As discussed above, Bonutti does not disclose or suggest a sensor, a sensor sensing a desired muscular force and providing a sensor signal output or a processor causing an actuator to provide a force to a brace in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force. Neither does Petrofsky.

Therefore, claim 9 is patentable over Bonutti and Petrofsky, because neither of these references, either alone or in combination, shows or suggests a sensor sensing and a processor causing an actuator to provide, to a brace, a force that is asymmetrical, the force in a first direction having a magnitude which is proportional to a magnitude of the sensor signal and in a second direction a spring return force. Accordingly, claim 9, and claim 10 which depends therefrom, should be allowed.


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CONCLUSION

All the claim rejections have been addressed and all of the pending claims are allowable for the reasons stated and others. Reconsideration of the application and issuance of a notice of allowance are respectfully requested. Applicants believes that no additional fees or an extension of time is required. Please apply any additional charges or credits to Deposit Account No. 19-4972.

Respectfully submitted,


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